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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/563,475	01/05/2006	Yuji Miyahara	HIRA.0214	6277

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EXAMINER	
GREENE, JAIME M	
ART UNIT	PAPER NUMBER
1634	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/563,475	MIYAHARA ET AL.	
	Examiner	Art Unit	
	Jaime M. Greene	1634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 January 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *11-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *11-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *11/07, 1/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This action is in response to papers filed 1/5/06. Claims 11-13 are pending in the instant application and are under examination on the merits

Information Disclosure Statement

2. The information disclosure statement (IDS) was filed on 1/5/06. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Specification

3. The title of the invention is not descriptive. For example, the title has no mention of Field Effect Transistors. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical

Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

5. Claims 11 is rejected under 35 U.S.C. 102(e) as being anticipated by Miyahara (Miyahara, et al. US Patent Application Publication 20050170347, filed 12/19/01).

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Miyahara teaches in claim 4 "A method of analyzing nucleic acids comprising the steps of: (a) introducing a sample solution containing at least one kind of nucleic acid onto a substrate provided with a plurality of insulated gate field effect transistors on which each different kind of single stranded nucleic acid probe or branched nucleic acid probe is immobilized on the surface of gate insulators directly or via a carrier, and subjecting to hybridization with the single stranded nucleic acid probes or branched nucleic acid probes; (b) introducing a washing solution onto the substrate to remove unreacted nucleic acids from the surface of the substrate; (c) introducing an intercalator solution onto the substrate to react with formed double stranded nucleic acids; (d) introducing the washing solution onto the substrate to remove unreacted intercalator

from the surface of the substrate; and (e) introducing a buffer onto the substrate to measure outputs of the insulated gate field effect transistors."

Therefore all limitations of claim 11 have been taught by the reference.

Claim Rejections - 35 USC § 103

6. Claims 12-13 rejected under 35 U.S.C. 103(a) as being obvious over Miyahara (Miyahara, et al. US Patent Application Publication 20050170347, filed 12/19/01) in view of Yazawa (Yazawa, et al. Patent Application Publication Number 20040121354, patented 7/2/07, filed 5/27/03).

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Miyahara teaches in claim 4 "A method of analyzing nucleic acids comprising the steps of: (a) introducing a sample solution containing at least one kind of nucleic acid onto a substrate provided with a plurality of insulated gate field effect transistors on which each different kind of single stranded nucleic acid probe or branched nucleic acid probe is immobilized on the surface of gate insulators directly or via a carrier, and subjecting to hybridization with the single stranded nucleic acid probes or branched nucleic acid probes; (b) introducing a washing solution onto the substrate to remove unreacted nucleic acids from the surface of the substrate; (c) introducing an intercalator solution onto the substrate to react with formed double stranded nucleic acids; (d) introducing the washing solution onto the substrate to remove unreacted intercalator from the surface of the substrate; and (e) introducing a buffer onto the substrate to measure outputs of the insulated gate field effect transistors."

Miyahara does not teach (from claim 12) that the FET has a transmission/reception antenna, a reception circuit, a transmission circuit and an external control unit (from claim 13) and that the FET has memory circuit.

However, Yazawa teaches a method of detecting biological material (col 3, lines 35-36). Yazawa teaches that DNA probes are fixed to a measurement apparatus and the coupling of target to probe can be detected using a Field Effect Transistor (col 4, lines 46-56). Yazawa teaches that the apparatus (FET) can have an external control unit and an antenna (col 4, lines 62-65). Yazawa teaches that the measurement apparatus can comprise function blocks including a sensor, an antenna, a detection circuit (i.e. a reception circuit), a rectifying circuit (i.e. a transmission circuit) and a

communication circuit (col 9, lines 31-35). Yazawa teaches that by integrating these function blocks on one chip, a small-sized lightweight measurement apparatus can be implemented while the process and assembly costs are minimized (col 9, lines 35-40). Yazawa teaches storing identification information (col 17, 54-56), and Yazawa teaches mounting memory for storing the sensor information (col 18, lines15-22).

Therefore, it would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Miyahara with the method of Yazawa that includes an external control unit and a FET containing an antenna, detection circuit, rectifying circuit and communication circuit because by integrating these function blocks on one chip, a small-sized lightweight measurement apparatus can be implemented while the process and assembly costs are minimized. Further it would have been prima facie obvious to add memory in order to store the sensor information.

One of ordinary skill in the art at the time the invention was made would have been motivated to modify the method of Miyahara with the method of Yazawa that includes using a FET containing an antenna, detection circuit, rectifying circuit and communication circuit because by integrating these function blocks on one chip, a small-sized lightweight measurement apparatus can be implemented while the process and assembly costs are minimized. Further the ordinary artisan would have been motivated to add memory in order to store the sensor information.

There is a reasonable expectation of success because both methods involve detecting DNA hybridization using a FET.

7. Claims 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fritz (Fritz, et al. PNAS October 29, 2002; 99(22): 14142-14146) in view of Hashimoto (Hashimoto, US Patent Number 5776672, patented 7/7/1998).

Regarding claim 11, Fritz teaches that probe molecules may be associated with (i.e. immobilized) a sensing surface (pp. 2-3, para 31), and that the sensing surface is an input for the gate of a field-effect transistor (pg 1, para 11). Fritz teaches that the probes can be nucleic acids.

Fritz teaches using field-effect sensors that are EIS (electrolyte-insulator-silicon) capacitors microfabricated at the termini of silicon cantilevers (i.e. insulated gate Field Effect Transistor). Fritz teaches in figure 3 the field effect detection of DNA hybridization. Fritz teaches the surface potential response from sensor 1 functionalized (i.e. immobilized) with probe oligonucleotide A and sensor 2 functionalized with probe oligonucleotide B. Fritz teaches injecting buffer, probe B, buffer, target oligo cA, buffer, target oligo cB and buffer (page 14144, figure 3A and caption). (Note that for purposes of this rejection, the buffer is considered to be broadly encompassed by the buffer and a wash solutions in the claims.) By detecting the changes in surface potential, Fritz teaches measuring output values.

While Fritz does teach hybridizing nucleic acids to probes and washing, Fritz does not teach introducing an intercalator solution.

Hashimoto teaches a nucleic acid probe that is immobilized onto a carrier sensitive to a physical change, such as an electrode, ISFET, MOSFET (col 8, lines 36-42). Hashimoto teaches that the nucleic acid probe is used to hybridize to a

complementary gene in order to detect the presence of the gene in a sample (col 2, lines 30-36). Hashimoto teaches intercalating agents that exhibit electrode response (col 3, lines 66-67 to col 4, lines 1-4), and Hashimoto teaches that intercalating agents that intercalate specifically to double stranded nucleic acid such as double stranded DNA (col 4, lines 5-15). Therefore, the intercalating agent is used to detect the binding of the probe to the gene (col 4, lines 66-67).

Therefore, it would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Fritz by using an intercalator in order to detect the presence of a gene by hybridizing the gene to a probe on a MOSFET or ISFET (types of field effect transistors) as described by Hashimoto.

One of ordinary skill in the art at the time the invention was made would have been motivated to modify the method of Fritz by using an intercalator, in order to detect the presence of a gene by hybridizing the gene to a probe on a MOSFET or ISFET (types of field effect transistors) as described by Hashimoto.

There is a reasonable expectation of success because both methods rely on the detecting the binding of a target nucleic acid to a probe on a field effect transistor device.

8. Claims 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fritz (Fritz, et al. PNAS October 29, 2002; 99(22): 14142-14146) in view of Hashimoto (Hashimoto, US Patent Number 5776672, patented 7/7/1998) further in view of Steinthal (Steinthal, et al. US Patent Application Publication Number 20040135684, published 07/15/04, filed 7/21/03).

Fritz teaches using field-effect sensors that are EIS (electrolyte-insulator-silicon) capacitors microfabricated at the termini of silicon cantilevers (i.e. insulated gate Field Effect Transistor). Fritz teaches in figure 3 the field effect detection of DNA hybridization. Fritz teaches the surface potential response from sensor 1 functionalized (i.e. immobilized) with probe oligonucleotide A and sensor 2 functionalized with probe oligonucleotide B. Fritz teaches injecting buffer, probe B, buffer, target oligo cA, buffer, target oligo cB and buffer (page 14144, figure 3A and caption). (Note that for purposes of this rejection, the buffer is considered to be broadly encompassed by the buffer and a wash solutions in the claims.) By detecting the changes in surface potential, Fritz teaches measuring output values.

While Fritz does teach a plurality of biomolecule detecting elements (A and B) hybridizing nucleic acids to probes and buffer solution in the reaction vessel, and detecting a signal, Fritz does not teach from claim 12: a transmission/reception antenna, reception circuit; a transmission circuit; or introducing an intercalator solution; and from claim 13: wherein the biomolecule detecting element comprises a memory circuit for storing identification information.

Hashimoto teaches a nucleic acid probe that is immobilized onto a carrier sensitive to a physical change, such as an electrode, ISFET, MOSFET (col 8, lines 36-42). Hashimoto teaches that the nucleic acid probe is used to hybridize to a complementary gene in order to detect the presence of the gene in a sample (col 2, lines 30-36). Hashimoto teaches intercalating agents that exhibit electrode response (col 3, lines 66-67 to col 4, lines 1-4), and Hashimoto teaches that intercalating agents

that intercalate specifically to double stranded nucleic acid such as double stranded DNA (col 4, lines 5-15). Therefore, the intercalating agent is used to detect the binding of the probe to the gene (col 4, lines 66-67).

Steinthal teaches sensors for DNA (para 161). Steinthal teaches a sensor apparatus, comprising: two or more sensor devices; a processing module coupled to each of the sensor devices and configured to process signals received from each of the two or more sensor devices to determine an environmental state; and a communication module that communicates information about the environmental state to a user (page 12, claim 1). Steinthal teaches that the sensor is a sensor interface circuitry module, which is configured to receive signals from a sensor array and provide signals to a processor module (page 4, para 65). Steinthal teaches that the sensor can be a FET (page 11, par 161).

Steinthal teaches that the device contains a power supply circuitry module (this is considered a transmission circuit) that is provided to control various modes of operation of the device (page 5, para 66).

Steinthal teaches that the apparatus includes a pick-up antenna (page 13, claim 6). Steinthal teaches that the sensor includes a wireless interface device (page 13, claim 8).

Steinthal teaches that the apparatus of can detect environmental changes and that the apparatus can includes memory module for storing parameters associated with the environmental conditions (page 13, claims 27 and 28). Steinthal teaches that the

memory stores various data (the data are considered output values), parameters and algorithms associated with event detection and identification (page 4, para 65).

Therefore, it would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Fritz by using an intercalator in order to detect the presence of a gene by hybridizing the gene to a probe on a MOSFET or ISFET (types of field effect transistors) as described by Hashimoto.

It would also have been prima facie obvious to the ordinary artisan to modify the method of Fritz in view of Hashimoto by using the apparatus of Steinthal in order to store various data, parameters and algorithms associated with event detection and identification.

One of ordinary skill in the art at the time the invention was made would have been motivated to modify the method of Fritz by using an intercalator, in order to detect the presence of a gene by hybridizing the gene to a probe on a MOSFET or ISFET (types of field effect transistors) as described by Hashimoto. The ordinary artisan would also have been motivated to modify the method of Fritz in view of Hashimoto by using the apparatus of Steinthal in order to store various data, parameters and algorithms associated with event detection and identification.

There is a reasonable expectation of because all of the references teach using Field Effect Transistors to detect nucleic acids.

Double Patenting

9. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the

unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

10. Claims 11-13 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-4 of U.S. Patent No. 7,273,704 in view of (Miyahara, et al. US Patent Application Publication 20050170347, filed 12/19/01), further in view of Steinthal (Steinthal et al, US Patent Application Publication 20040135684).

Claims 1-4 of '704 teach a method of detecting a nucleic acid by allowing a sample of nucleic acids to interact with probes on a DNA microarray and monitoring the results of the hybridization between the nucleic acids and the probes using a FET for detecting.

The claims do not teach (claim 11) washing off the unreacted nucleic acid and adding an intercalator, (claim 12) a transmission/reception antenna, reception circuit; a transmission circuit; or introducing an intercalator solution, and (claim 13) wherein the

biomolecule detecting element comprises a memory circuit for storing identification information.

Miyahara teaches in claim 4 "A method of analyzing nucleic acids comprising the steps of: (a) introducing a sample solution containing at least one kind of nucleic acid onto a substrate provided with a plurality of insulated gate field effect transistors on which each different kind of single stranded nucleic acid probe or branched nucleic acid probe is immobilized on the surface of gate insulators directly or via a carrier, and subjecting to hybridization with the single stranded nucleic acid probes or branched nucleic acid probes; (b) introducing a washing solution onto the substrate to remove unreacted nucleic acids from the surface of the substrate; (c) introducing an intercalator solution onto the substrate to react with formed double stranded nucleic acids; (d) introducing the washing solution onto the substrate to remove unreacted intercalator from the surface of the substrate; and (e) introducing a buffer onto the substrate to measure outputs of the insulated gate field effect transistors." Miyahara teaches that their invention allows measurement of high accuracy using a system having a low running cost and a low price (page 1, para 6).

Steinthal teaches sensors for DNA (para 161). Steinthal teaches a sensor apparatus, comprising: two or more sensor devices; a processing module coupled to each of the sensor devices and configured to process signals received from each of the two or more sensor devices to determine an environmental state; and a communication module that communicates information about the environmental state to a user (page 12, claim 1). Steinthal teaches that the sensor is a sensor interface circuitry module,

which is configured to receive signals from a sensor array and provide signals to a processor module (page 4, para 65). Steinthal teaches that the sensor can be a FET (page 11, par 161).

Steinthal teaches that the device contains a power supply circuitry module (this is considered a transmission circuit) that is provided to control various modes of operation of the device (page 5, para 66).

Steinthal teaches that the apparatus includes a pick-up antenna (page 13, claim 6). Steinthal teaches that the sensor includes a wireless interface device (page 13, claim 8).

Steinthal teaches that the apparatus of can detect environmental changes and that the apparatus can includes memory module for storing parameters associated with the environmental conditions (page 13, claims 27 and 28). Steinthal teaches that the memory stores various data (the data are considered output values), parameters and algorithms associated with event detection and identification (page 4, para 65).

Therefore it would have been prima facie obvious to the ordinary artisan, and the ordinary artisan would have been motivate to modify the method of claims 1-4 of '704 with the method of Miyahara of washing the unreacted probe and using an intercalator in order to gather measurements of high accuracy using a system having a low running cost and a low price. It would also have been prima facie obvious and the ordinary artisan would have been motivated to modify the method of claims 1-4 of '704 in view of Miyahara by using the apparatus of Steinthal in order to store various data, parameters and algorithms associated with event detection and identification.

There is a reasonable expectation of success all three references teach using FETs as sensors.

11. Claim12-13 provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 4-5 of copending Application No. 10/499,005 in view of Steinthal (Steinthal et al, US Patent Application Publication 20040135684).

Claim 4 of '005 teaches "A method of analyzing nucleic acids comprising the steps of: (a) introducing a sample solution containing at least one kind of nucleic acid onto a substrate provided with a plurality of insulated gate field effect transistors on which each different kind of single stranded nucleic acid probe or branched nucleic acid probe is immobilized on the surface of gate insulators directly or via a carrier, and subjecting to hybridization with the single stranded nucleic acid probes or branched nucleic acid probes; (b) introducing a washing solution onto the substrate to remove unreacted nucleic acids from the surface of the substrate; (c) introducing an intercalator solution onto the substrate to react with formed double stranded nucleic acids; (d) introducing the washing solution onto the substrate to remove unreacted intercalator from the surface of the substrate; and (e) introducing a buffer onto the substrate to measure outputs of the insulated gate field effect transistors." Claim 5 of '005 depends from claim 4 of '005, and claims 12 and 13 of the instant application are unpatentable over claim 5 of '005 for the reasons applied to claim 4 of '005.

Claim 4 of '005 does not teach from claim 12: a transmission/reception antenna, reception circuit; a transmission circuit; or introducing an intercalator solution; and from claim 13: wherein the biomolecule detecting element comprises a memory circuit for storing identification information.

Steinthal teaches sensors for DNA (para 161). Steinthal teaches a sensor apparatus, comprising: two or more sensor devices; a processing module coupled to each of the sensor devices and configured to process signals received from each of the two or more sensor devices to determine an environmental state; and a communication module that communicates information about the environmental state to a user (page 12, claim 1). Steinthal teaches that the sensor is a sensor interface circuitry module, which is configured to receive signals from a sensor array and provide signals to a processor module (page 4, para 65). Steinthal teaches that the sensor can be a FET (page 11, par 161).

Steinthal teaches that the device contains a power supply circuitry module (this is considered a transmission circuit) that is provided to control various modes of operation of the device (page 5, para 66).

Steinthal teaches that the apparatus includes a pick-up antenna (page 13, claim 6). Steinthal teaches that the sensor includes a wireless interface device (page 13, claim 8).

Steinthal teaches that the apparatus of can detect environmental changes and that the apparatus can includes memory module for storing parameters associated with the environmental conditions (page 13, claims 27 and 28). Steinthal teaches that the

memory stores various data (the data are considered output values), parameters and algorithms associated with event detection and identification (page 4, para 65).

Therefore, it would have been prima facie obvious to the ordinary artisan to modifiy the method of claim 4 of '005 to by using the apparatus of Steinthal in order to store various data, parameters and algorithms associated with event detection and identification.

The ordinary artisan would also have been motivated to modify the method of claim 4 of '005 by using the apparatus of Steinthal in order to store various data, parameters and algorithms associated with event detection and identification.

There is a reasonable expectation of success because both references use Field Effect Transistors as the sensors.

This is a provisional obviousness-type double patenting rejection.

12. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

13. Claim 11 is provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claim 4 of copending Application No. 10/499,005 This is a

provisional double patenting rejection since the conflicting claims have not in fact been patented.

Claim 4 of '005 teaches "A method of analyzing nucleic acids comprising the steps of: (a) introducing a sample solution containing at least one kind of nucleic acid onto a substrate provided with a plurality of insulated gate field effect transistors on which each different kind of single stranded nucleic acid probe or branched nucleic acid probe is immobilized on the surface of gate insulators directly or via a carrier, and subjecting to hybridization with the single stranded nucleic acid probes or branched nucleic acid probes; (b) introducing a washing solution onto the substrate to remove unreacted nucleic acids from the surface of the substrate; (c) introducing an intercalator solution onto the substrate to react with formed double stranded nucleic acids; (d) introducing the washing solution onto the substrate to remove unreacted intercalator from the surface of the substrate; and (e) introducing a buffer onto the substrate to measure outputs of the insulated gate field effect transistors." This claim has the identical limitations to those of instant claim 11.

Conclusion

None of the claims have been allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jaime M. Greene whose telephone number is 571-270-3052. The examiner can normally be reached on Monday-Thursday, 7:30am-5:00pm, ALT. Friday, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ram Shukla can be reached on 571-272-0735. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jaime Meredith Greene 11/20/07

J. Goldberg

JEANINE A. GOLDBERG
PRIMARY EXAMINER
12/3/07